

# Data Center Energy Efficiency Incentive Programs

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# Programs for Business Customers *At a Glance*

- Energy Audits
- Express Efficiency
- Standard Performance Contracts
- Savings By Design
- Building Operator Certification
- Schools Resource Program
- Emerging Technologies
- Codes and Standards
- Education and Training
  - Industrial Strength Seminars
  - Pacific Energy Center



# Energy Audits



- Energy experts can survey your facility, assess your energy usage, and offer advice on ways to save energy and money
- Surveys are offered in a variety of formats:
  - In person
  - Web-based (Internet)
  - CD-ROM
  - Phone
  - Mail-in
- You'll receive energy-saving tips and recommendations on rebate programs

# Express Efficiency

- Choose from a predetermined list of eligible energy-efficient equipment in following categories:
  - Lighting
  - HVAC/Food Service/Other
  - Refrigeration
  - Natural Gas
- Annual cap is now \$200,000 per customer
- Must apply before December 31, 2005
- Reservations not required, but advised



# Standard Performance Contract

- For standard and customized energy-saving upgrades and retrofits
- Project incentives for facility owner or project “sponsor”, up to \$300,000 per site, up to 50% of the project implementation costs
- 3 Program approaches:
- **Itemized Savings:** For common large retrofit items, calculations and incentives are available online in calculators.
- **Calculated Savings** – Performance based savings based on a customized project
- **Measured Savings** : Performance based savings based on pre and post-project consumption

# Standard Performance Contract

The following incentive rates apply by the type of retrofit undertaken

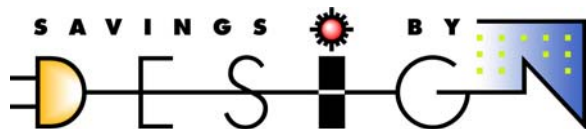
Type of Retrofit	Incentive Rate
Lighting***	5¢ /kWh
HVAC & Refrigeration	14¢ /kWh
Motors, etc.	8¢ /kWh
Natural Gas	\$1 /therm

\*\*\* Must be second or third generation lighting technology

# Savings By Design



- A statewide program to encourage high-performance nonresidential building design and construction
- Available for new construction and major renovations & remodels
- Available to commercial, industrial, and agricultural projects



# Savings By Design

## Two Approaches:

### 1. Whole Building Approach

- Integrated approach results in most energy-efficient and cost-effective buildings

### 2. Systems Approach

- Where energy systems are designed in phases
- Where one energy system predominates
- When design is too far along to make fundamental changes





# Savings By Design

Three Benefits:

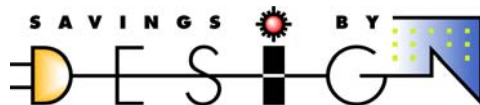
1. Design Assistance
2. Owner Incentives
3. Design Team Incentives



# Savings By Design

## Incentives

- Owners
  - Incentives available when project exceeds program baselines by 10% or more
  - Up to \$150,000 per project
- Design Teams
  - Whole Building projects in schematic or early design development phase
  - Incentives available when building is 15% better than Title-24 baseline
  - Up to \$50,000 per project



# Savings By Design



## Program Baselines

- Commercial:
  - CA Title 24 requirements
- Industrial Baseline:
  - Legislated mandates, industry guidelines, design protocols, and other commonly accepted industry practices

# Project Approach



## Current Data Center Opportunities:

- Chiller
- Compressor
- VFD's
- Economizers
- Cooling towers
- Water temperature
- Air temperature



# Project Examples



## Data Center Systems:

- Cypress Semiconductor data center equipment VFD installations
- Hurricane Electric data center installation of air side economizer
- Sybase data center installation of water cooled chiller with condenser water reset
- Cisco Systems multiple projects in data center and labs

# Cisco Systems Case Study

## Building 7:

High performance VFD chiller with automatic condenser water temperature reset

- 996,000 kwh
- 140 KW
- 0.1 year payback

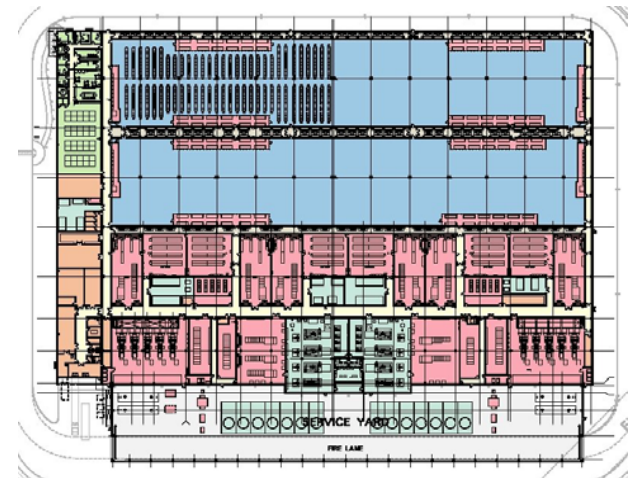


# Cisco Systems Case Study

## Building 7:

### Tower fan Variable Frequency Drive

- 112,000 kwh
- 14 KW
- 0.5 year payback



# Cisco Systems Case Study

## Building 7:

29.5 degree delta T (fan energy)

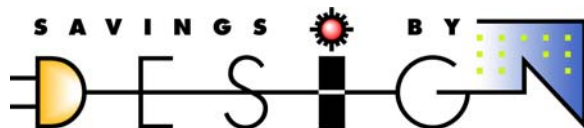
- 179,000 kwh
- 20 KW
- 0.6 year payback



# Energy Design Resources



- The education & training component of PG&E's new construction programs oriented towards architects & engineers
- [www.energydesignresources.com](http://www.energydesignresources.com)
- Website contains Design Briefs, Design Guidelines, Case Studies, Design Tools and Online Training to support your new construction projects
- Materials also available in hard copy and on disk



# Application Process

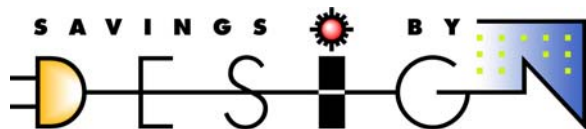


- Project Scope
- Investment criteria
- Call PG&E
- Application
- Pre-field for SPC
- Project meeting
- Verification



# Application Example (SBD)

- Example Project Scope – Convert 10,000 sq ft office into data center at 100 W/sq ft.
- Investment Criteria – Maximum 3 year payback
- Call PG&E – CEE Rep, AS Rep, Web, 1-800-468-4743
- Application – Letter of Interest
- Pre-field for SPC – n/a for SBD
- Project Meeting – EEMs to analyze key design decisions & project schedule
- Verification – Cash incentive payment based upon final installation



# Useful Websites and More Program Information

Please visit:

[pge.com/foryourbusiness](http://pge.com/foryourbusiness)

[pge.com/spc](http://pge.com/spc)

[savingsbydesign.com](http://savingsbydesign.com)

[energydesignresources.com](http://energydesignresources.com)

[pge.com/pec](http://pge.com/pec)

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